

TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

CAST Robotic Follower Overview

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 07 JUL 2011		2. REPORT TYPE N/A		3. DATES COVERED	
4. TITLE AND SUBTITLE CAST Robotic Follower Overview				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Army RDECOM-TARDEC 6501 E 11 Mile Rd Warren, MI 48397-5000, USA				8. PERFORMING ORGANIZATION REPORT NUMBER 21983	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) TACOM/TARDEC/RDECOM				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT SAR	18. NUMBER OF PAGES 4	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

DoD transportation/logistics personnel face inherent challenges daily

IEDs and other low tech attacks

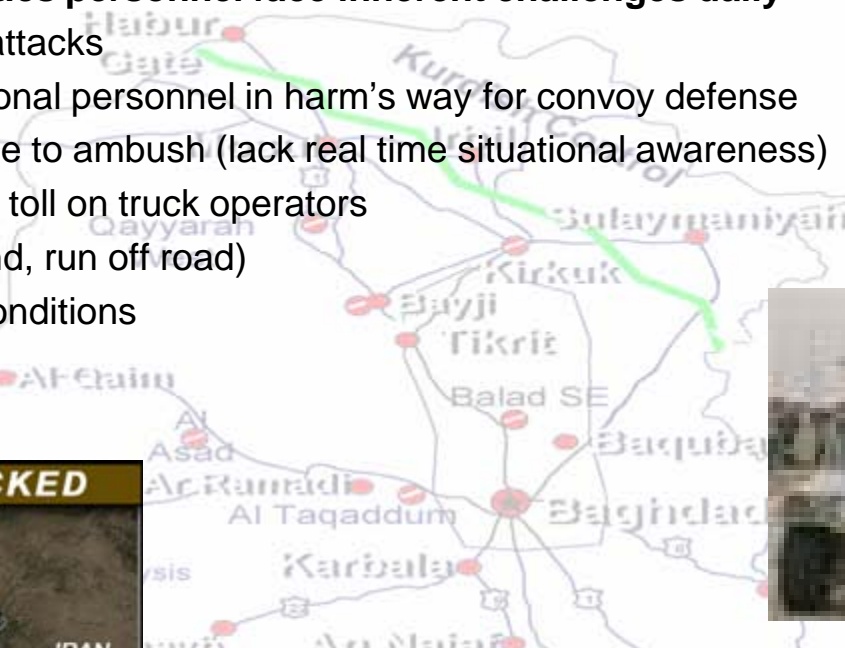
Threat level places additional personnel in harm's way for convoy defense

Truck operators vulnerable to ambush (lack real time situational awareness)

Long 18 hour days take a toll on truck operators

Driving accidents (rear end, run off road)

Limited visibility driving conditions



IRAN



U.S. TROOPS ATTACKED



The Challenge:

Effectively utilize existing automation technology to enhance soldier performance/reduce threat exposure while conducting the 3 Ds:

Dull, Dirty, or Dangerous

GPS
Communications

SICK LADAR
Color Camera
ACC RADARS

Ground Speed
Sensors

SICK LADAR



Turnkey
Interface



Provide low cost Robotic Convoy capability for current force Army vehicles

Provide lessons learned on robotic convoy for FCS(BCT)

Leverage Robotic Follower ATO and other FCS Technologies

Provide robotics capability in CS/CSS community in out-years

Generate Warfighter requirement for Robotic Convoy

- OSD Joint Ground Robotics Enterprise (JGRE) is covering the cost of the Warfighter Experiments
- JC-UGV is sponsoring the technology development
- Co-sponsored program between the JGRE and the JC-UGV

Convoy Active Safety Technologies CAST 2007 Summary



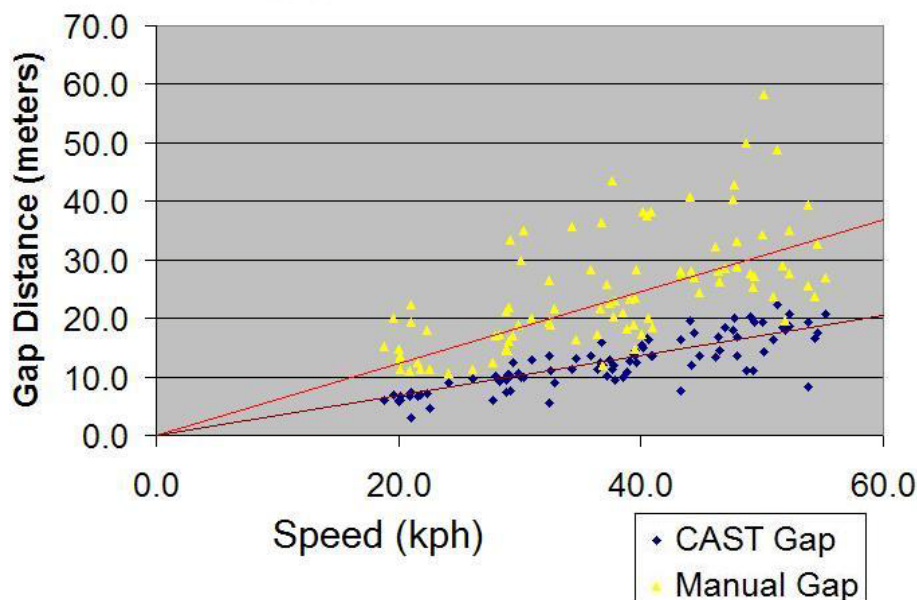
+ 20%

- Warfighter Experiments
In support of draft ICD
and JCTD foundation
- WE1 tested S.A., fatigue,
rear-end avoidance,
cognition and convoy integrity



- WE2 to test limited visibility
environments, line haul
speeds, multi-vehicle testing
and obstacle avoidance
- Momentum at user rep.
level for new requirement

**Change in Gap Distance
After Emergency Breaking**



**Gap Distance
Performance**

